Community Preferences on the Development of the Household Waste Bank in Makassar City

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ABSTRACT: Study this aim for analyzing the influence of income society, the number of member families, expenses consumption society, and insight house ladder as factors to participation society. Study this using the primary data obtained through Interviews direct to waste bank customers in the district Mangala and secondary data obtained from waste management. In research, this uses the method _of Ordinary Least Square_ (OLS). Research results show income Public has a negative effect however significant on participation in society. The amount of member family takes to effect positive and significant participation in society. Expenditure consumption Public takes an effect on positive and significant participation in society. Outlook Public has no significant influence on participation in society.

Keywords: participation society, income society, number member family, expenses consumption house ladder, insight house stairs.

1. Introduction

Rubbish is a problem experienced by almost whole cities big in Indonesia so not amazed if said that rubbish is a problem national. In the case of this governmenneedsed to do management in a manner comprehensive and integrated to give benefits in manner economics, health for the community, and safe for the environment. Garbage is also a consequence from exists activities

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carried out by humans.[1]

With the improvement in population and growing economy, the moment this management of trash in the part big city still raises difficult problems controlled. The community only collects garbage in their homes, then the garbage is taken by the garbage collector (garbage officer) then the garbage collector takes the garbage to the TPS (Temporary Storage Area), from the TPS the garbage is transported by garbage trucks and then disposed of to the TPA (Landfills).[2]

In addition, the Makassar City government, in this case, the Makassar City Sanitation and Environment Service (DLHK), has provided a final disposal facility or commonly known as a Final Disposal Site (TPA) located in Tamangapa Village, Manggala District. However, the existence of TPA is assessed not capable of accommodating the increasing volume of waste increases, the government the city of Makassar makes a program with the purpose for grow and improving the role of the Public will importance to the cleanliness environment as well as help and provide additional income for society. Case this is in the presence of a Garbage Bank in each district (Waste Bank Sectoral) scattered throughout the district in the city of Makassar.[3]

Makassar City donated rubbish as big as 10 tons per day in 2020. Beginning with problem rubbish, the government make innovation in the form of a Garbage Bank, which is capable process waste and reducing the amount of waste in Makassar City. Garbage Bank is something receptacle where occur service Among savers garbage (customers) and tellers of the Garbage Bank. Mechanism management rubbish in the waste bank is almost the same as in conventional banks in general. The difference lies in the shape of goods that are saved, if conventional banks are saved is money and making money, while in the Garbage Bank that is saved is rubbish then makes money (Suwerda, 2012).[4]

Participation and roles Public in the Waste Bank management program

naturally could reduce the burden environment with exists danger of trash, a lot of trash, and the amount of waste in Makassar City. Besides that, the value community's economy from participating in the waste bank management program could increase the welfare and prosperity of society.[5] Communities can make rubbish Becomes other items of value economical like bags, wallets, and accessories other than trash. Society can also make fertilizer valuable organic sell on the market. Participation in Public is his participation in following every activity or the established Waste Bank program government so that the Public follows an empowered and involved role active in the process of planning, implementing, and maintaining (Septa Satri, 2014).[6]

Society can apply waste bank management in reducing the amount of waste generated by garbage house ladders or in the environment surrounding. In addition, the Garbage Bank is needed to resolve the enhancement burden of internal budget transport and processing trash. This remembers the amount of waste generated in Indonesia very much. The amount of waste in Indonesia is increasing day the more increases, so no close possibility the necessary budgetary funds are also included increase. Waste Bank Management have many impacts positive among them is could increase the health of society, reduced various impact negative on the environment, change habit or behavior in society, as well have values sell what you can add to income and welfare community (Raharjo, et al, 2015).[7]

Based on the data obtained from the trash bank about percentage amount Garbage Bank customers period March 2019 to January 2021 experience Fluctuations, this can see from amount customers every recorded period every once in two months. In March 2019 the number of customers in the chart above was only 8 people because these were early customers so the number was still lacking, but in the following month in May, the number changed to 19 registered customers. The lowest number of customers occurred in April 2020, namely 3 people. This was due to the high number of infected with the Covid-19 pandemic at that time, so people minimized interaction with other people,

which caused people to be afraid to deposit waste in the garbage bank. Then in November 2020, there was an increase in the number of customers by 40 people because at that time the number of infected with Covid-19 had started to decrease but the impact on people's income was still being felt so people chose to increase their income by depositing waste into the garbage bank.

From the description above so the writer is interested for take the title "Analysis Community Preference Against Development of Garbage Banks in the District Manggala City of Makassar" with the destination for knowing factors that only can influence the development of waste banks in sub-districts Manggala.

Study this based on several theory that is theory externality, theory offers, and theory production. Externality theory according to N Gregory Mankiw is the impact of one's actions or something party to the well-being or condition of people or party other. If the impact is detrimental, then the Thing is called externality negative. Conversely, if the impact of profitable so-called externality is positive. externality arises because action consumption or production from one party has an influence on the other party doesn't there is compensation received by the affected party that impact.[8]

The theory of supply explains that the quantity of goods supplied is proportional to the price level. That is, if the price of goods increases, the number of goods and services supplied will also increase. Conversely, if prices fall, the quantity supplied of goods and services will also decrease. [9] The theory explains that the greater the benefits offered by the waste bank, the more people will increase their participation in the waste bank program. The production theory in this study explains that the greater the number of family members, the higher the level of waste products so the amount of waste deposited by customers will increase.

Fika F. and Dewi N (2017)[10] did research about analysis of the influence of the waste bank poor (BSM) against income in Public Malang city. This study aims

to determine the effect of the Malang Garbage Bank (BSM) on people's income in Gading Kasri Village, Klojen District, Malang. This type of research is a survey in nature, namely conducting data collection activities, data analysis, and data interpretation which aims to make a picture of the events that occurred during the research in the Gading Kasri Village area. The data used are primary data and secondary data. Primary data were obtained from direct questions and answers through interviews, questionnaires, and documentation from people who were included in the BSM group. Secondary data was obtained from BSM regarding the BSM community group in Gading Kasri. The data is analyzed based on indicators of finance with the use analysis of simple linear regression. Based on data analysis, after the existence of a waste bank program, this happened a little enhancement to the income community in the Village of Ivory Kasri. The result of the study is the Garbage Bank program brings benefit positive to the environment making the environment Becomes cleaner and the most felt by society that is to decrease stack trash in the environment around that long this Becomes less sight interesting around ward Ivory Kasri. The existence of a waste bank program, this happened a little enhancement to the income community in the Village of Ivory Kasri.

Mita N (2013)[11] researched the impact of the waste bank program on the socio-economic community in the village of Binjai, district Medan Denai, Medan city. The purpose of the study is for knowing how the impact of the waste bank program on the social economy community in the Village Binjai, District of Medan Denai. Study use method studies descriptive with analysis quantitative. The result of the study is there is a positive impact on life social economy community in the Village Binjai after exists Garbage Bank construction. This is shown with the enhancement income Public although little bit but gives meaningful benefits for society. Not only income only experienced an increase, but health and interactions in a more socially good society are the most important environment net also experienced enhancement from time to time.

Linda, Rizal, and Ahmad (2017)[1] researched the waste bank development

strategy in the Depok area. Research objectives this is to identify the EFE and IFE factors of the waste bank to be able to endure as well as sustainable. Data collection techniques using FGD, interviews experts, and charging questionnaires by WPL Waste Bank customers and their partners. Data analysis using SWOT and AHP methods to determine the strategy in detail and priorities of main development waste bank activities. Results of EFE and IFE analysis of waste banks show that activity potentially grows and develops with permanent consistent to do activities that have taken place, has planning business and goals waste bank development, expanding network connection or network with the party outside as well as to do market penetration and development for push sale product results processing trash.

Hafizh and Benno (2018)[12] research about analysis factor handling and preferences Public to the processing system waste in Jatinagor. The purpose of the study is for knowing factor what just the background level preference Public based on bad level handling waste in the community in 3 areas the use of analysis factors with the PCA (Principal Component Analysis) method and multilinear regression produces 7 of 13 factors group variable handling significant waste take effect to level preference society. As well through analysis of cluster preference 2 identified community clusters (low & high) with the dominance of 1-factor weakness and 2 factors power on both clusters. The result of the study is in manner whole level handling waste by society Jatinangor has scored (0.1/1) with the predicate "Not Good" so needs to handle rubbish more continue.

Ratiabriani and Purbadharmaja (2016)[6] research about participation Public in the garbage bank program: logit model. The purpose of the study is to analyze how participation Public is in the waste bank program in Denpasar City and to analyze the influence of variable levels of education, income family, employment status, and the number in Denpasar City. The result of the study found that participating communities are active in the waste bank program in Denpasar City namely by 64.3 percent. Education level, income family,

employment status, and the number of banks trash.

Hypothesis in a study is as follows:

1. Allegedly there is a negative influence between income Public on the status of society.
2. Allegedly there is a positive and significant influence Among amount members of the family on the status of society.
3. Allegedly there is a positive and significant influence Among expenditure consumption house ladder on the status of society.
4. Allegedly there is a positive and significant influence Among the outlook house ladder on the status of society.

2. Method

This research was conducted at a Garbage Bank located in Manggala District, Makassar City, South Sulawesi Province. Determining the location as the object of research is done purposively. While the object of this research is the waste bank customers in Manggala District, Makassar City.

Study this use approach quantitative research that uses primary data obtained from waste bank customers in the District Manggala. Study this studies cases that focus on waste bank customers in the District Manggala with a population of as many as 56 people. data in a study this collected through Interviews in a manner directly to the respondent.

In research this use multiple linear model analysis with the Ordinary Least Square (OLS) method. this method is used for analyzing the influencing variable free to variable related.

Analysis this used to see exists influence of income society, the number of member families, expenses consumption society, and insight house ladder to participation society. Analysis of this in a manner mathematics could state in form functions as follows:

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$$Y = f(X_1, X_2, X_3, X_4)$$

………………………………………………………………………….……… (1)

Where:

Y = Community Participation (Kg)

X_1 = Community Income (Rp)

X_2 = Amount member family (Person)

X_3 = expenses consumption house ladder (IDR)

X_4 = Insight house ladder (Dummy)

α_0 = Constant

Next in a manner explicit could state in non-linear equations as follows:

$$Y = X_1^{\alpha_1} X_3^{\alpha_3} e^{(\alpha_0 + \alpha_2 X_2 + \alpha_4 X_4 + \mu)}$$

……………….............…………….…………… (2)

Then transformed return in form natural logarithm (ln) as follows:

$$Y = \alpha_0 + \alpha_1 \ln X_1 + \alpha_2 X_2 + \alpha_3 \ln X_3 + \alpha_4 X_4 + \mu$$ ………………………………

(3)

3. Discussion

Estimation results in research in see the influence of income society, number of member family, expenses consumption house ladder, and insight Public to participation society. Deep data management study this use Eviews 9. The results obtained, are as follows:

Estimation Results Community Income (X1) Total Member Family (X2) Expenditures Household Consumption (X3) Household Insight (X4) on Community Participation (Y)

Variables	Coefficient	std. Error	z-Statistics	Prob.
C	-0.446880	1.039716	-0.429810	0.6691
LOGX1	-0.106647	0.037036	-2.879561	0.0058
X2	0.136255	0.021292	6.399398	0.0000
LOGX3	0.458986	0.063221	7.260040	0.0000
X4	0.054379	0.057967	0.938093	0.3526
R-squared	0.943642	F-statistics		2.134835
Adjusted R-squared	0.939222	Prob (F statistic)		0.000000

Based on the table above explains the influence of income society, the number of member families, expenses consumption house ladder, and insight house ladder to participation society, then obtained R2 of 0.943642 which means 94 percent variation change in social status could be explained by variations income society, number member family, expenses consumption house ladder, and insight house ladder whereas the rest that is 6 percent influenced by other variables that are not entered in a study this.

Testing simultaneously (F-Test) was used in the study for seeing all influences and all variables independent. F- Statistics Test in a study uses level significance by 0.05 percent which is description limit level error the maximum you can happen. Based on table 1 obtained probability value F- Statistics is equal to 0.000000 is smaller than the limit error maximum in a study is 0.05 with an F- Statistics of 2.134835. Thereby could conclude that variables in a manner together could explain the score independent variable or participation society (Y).

The estimation results in table 1 state that the income Public takes an effect negatively and significantly on the status of society. This can be seen in the probability value that is owned is smaller than 0.05, which is equal to 0.0058. Based on the results so could conclude that changes in the income Public so will lower the desire somebody for join the waste bank program. This result is following the hypothesis initially stated that the income public negative and significant effect on participation in society. Research results in this no in line with research conducted by Fitria Arifah, Fitriah PC, Abd. Hadi (2019) stated that there is a positive influence however no significant Among income participation Public in the waste bank program.

The estimation results in table 1 also state the amount member family take to effect positive and significance the status of society. This could be seen in the probability that is owned small than 0.05 is 0.0000. The coefficient of the resulting regression is 0.136255 which means when the variable amount of member family experience increases by one percent so will increase by 13.6 percent to participate in society. this result follows the hypothesis initially stated that the amount member family take to effect positive and significant participation in society. Research results in this are in line with research conducted by NM Ratiabriani and Ida Bagus (2016) who examined about participation Public in the waste bank program. Results of study the state that amount members of a family take to effect positive and significance to participation society.

Estimation results next state that expenditure consumption Public takes to effect positive and significant to participation society. Then it can be seen that the resulting regression coefficient is 0.458986 which means that when the public consumption expenditure variable increases by one percent, it will increase by 45.9 percent of public participation. This result is by the hypothesis initially stated that expenditure consumption Public takes to effect positive and significant to participation society. Change pattern consumption society in the

end raises problems new among them is the emergence of trash. heap rubbish influenced by quantity population too dense and active humans who don't once stop.

The estimation results in table 1 also state that the outlook house ladder has no significant influence on participation in society. This can be seen from the probability that it is greater than 0.05 which is equal to 0.3526. Based on the results obtained, it can be concluded that whatever changes occur in household insights have not been able to influence community participation. The results of this study are not in line with research conducted by Sarah PM, Indra C, and Irnawati M (2013) which states that community insight has a significant effect on community participation in the waste bank program. Insight into society regarding the waste bank, of course, be one reason behavior somebody Becomes a friendly environment or wants to become a customer in the waste bank program. However, in society districts, Mangala, insight Public no Becomes reject measuring they for join in the waste bank program. This could be seen from the attitude Public is already good in Thing management trash. This could be caused by society having an active notice environment, so in a manner positively manage rubbish well (Notoatmodjo, 2003) one of them with join Becomes waste bank customer.

In research, this use testing assumption classic forsee is in a study this equality regression obtained have decreed in the estimate and be consistent.

Normality test is testing to measure is the data in a study this distributed normally or not. A good research model is a model that has distributed data normally. In research, this uses the Jarque-Bera method to test the normality of the data used. The following results test obtained:

Table 2. Normality Test

Jarque-Bera	1.930690
Probability	0.380852

Based on the table it can be seen that the probability resulting from the Jarque-Bera test is 0.380852 which means it is greater than 0.05 so it can be concluded that the data in this study can be normally distributed.

Testing both done is the heteroscedasticity test. Testing heteroscedasticity is testing performed to evaluate if there is an inequality variant from residuals to all observations on the linear regression model. In research, this uses Breusch-Pagan-Godfrey testing to see if there is or is no symptom of heteroscedasticity in a study like this.

Table 3. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey	
Prob. F (4.25)	0.6833
Prob. Chi-Square (4)	0.6610
Prob. Chi-Square (4)	0.7135

The basis for making decisions in this test is if the value is more than 0.05. Based on the probability table obtained is 0.6610 which means greater than 0.05 so it can be concluded that in this study there were no signs of heteroscedasticity.

Testing third done is a multicollinearity test. Multicollinearity test is testing performed to see if in the study there is two or more variable free to correlate linearly. Research using the Coefficient Variance Inflation Factor (VIF) for profit see exists symptom multicollinearity.

Table 4. Multicollinearity Test

Variables	Centered VIF
C	NA
LN_X1	1.303719
X2	4.514244
LN_X3	4.292401
X4	1.058844

In research, if VIF>10 then there is symptom multicollinearity, if VIF<10 then could conclude that no there is symptom multicollinearity. Based on the table all variables have a score not enough from 10 to could conclude that in a study no there is symptom multicollinearity.

Testing last done in a study is an autocorrelation test. Autocorrelation test is testing performed for the test in a study there is a correlation between every period t with a t-1 period. Testing autocorrelation was conducted to see if there is an influence between variable free to variable related, and not can there is a correlation with the period before. In research, this uses the Breusch-Godfrey Test method to see if there is autocorrelation between every variable.

Table 5. Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test	
Prob. F (2.49)	0.2615
Prob. Chi-Square (2)	0.2250

Based on the probability table obtained is 0.2250 which means bigger than 0.05. So, got concluded that in a study no there is symptom autocorrelation.

4. Conclusion

Based on the results obtained in the study this could pull conclusion as follows:

1. Community income has a negative and significant effect on community participation. This shows that the greater the community's income, the lower the community's participation in the waste bank program.

2. The number of family members positively and significantly affects community participation. This shows that the more the number of members in one family, the more it will increase community participation in the waste bank program.

3. Household consumption expenditure positively and significantly affects community participation. This shows that the greater the costs incurred to meet family needs, the more it will increase community participation in the waste bank program.

4. Household insight does not significantly affect community participation. This shows that having insight or not regarding the waste bank program does not affect community participation in the waste bank program.

Based on conclusions that have been obtained in a study this then any advice given is as follows:

The government city needs to increase the public participation in the waste bank program. One method gives the public socialization regarding the garbage bank program so that they have good insight into this program.

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